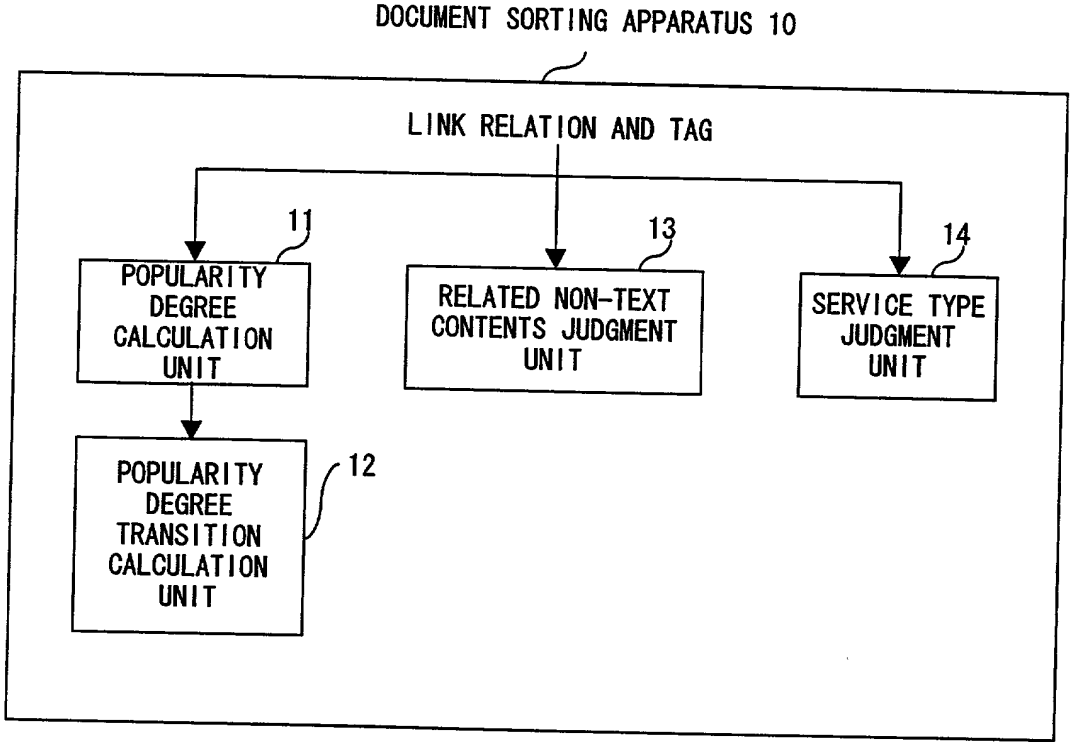
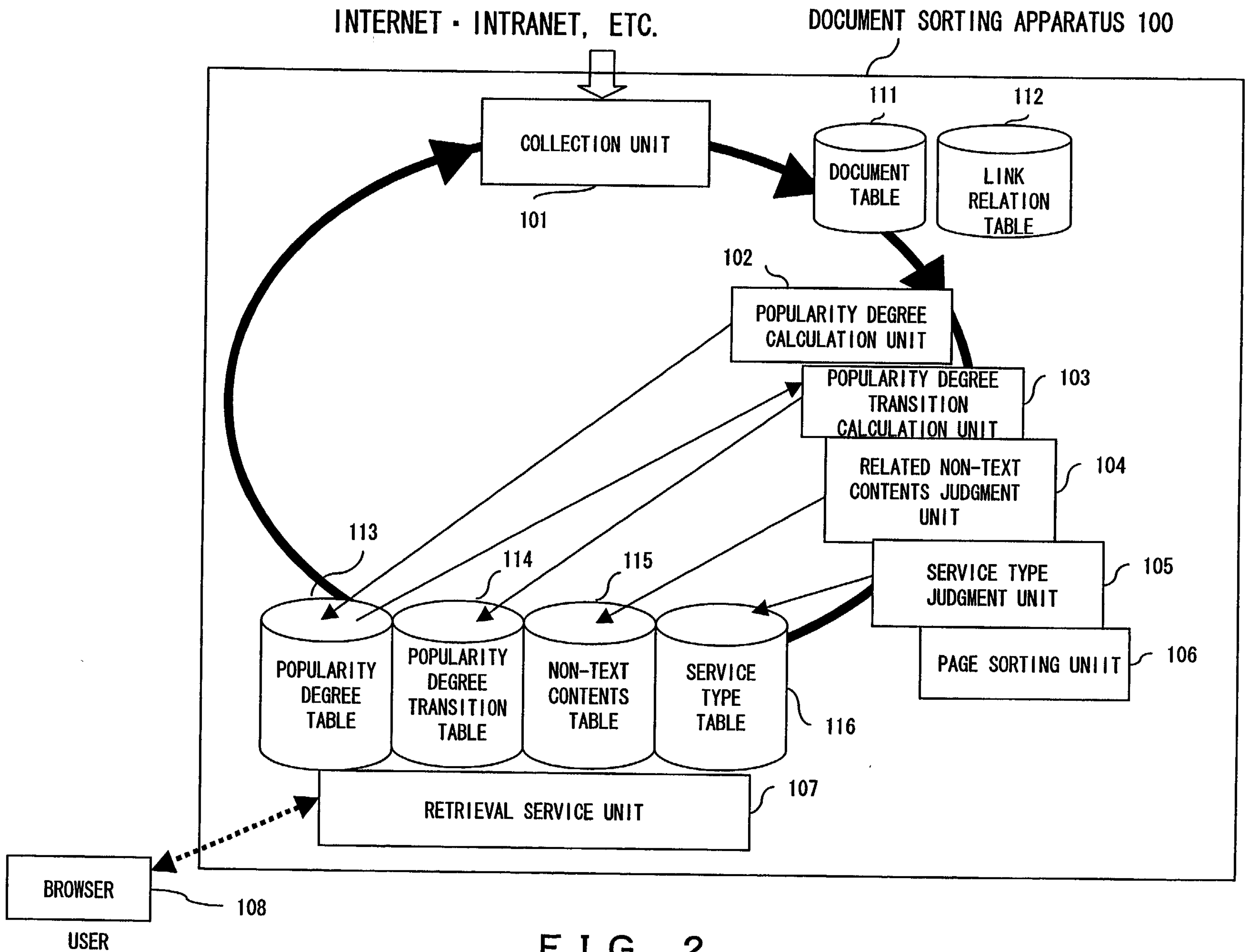

DOCUMENT SORTING APPARATUS 10
LINK RELATION AND TAG
11
POPULARITY DEGREE CALCULATION UNIT
13
RELATED NON-TEXT CONTENTS JUDGMENT UNIT
14
SERVICE TYPE JUDGMENT UNIT
POPULARITY DEGREE TRANSITION CALCULATION UNIT
12

FIG. 1


INTERNET · INTRANET, ETC.
DOCUMENT SORTING APPARATUS 100
COLLECTION UNIT
101
111
DOCUMENT TABLE
112
LINK RELATION TABLE
102
POPULARITY DEGREE CALCULATION UNIT
103
POPULARITY DEGREE TRANSITION CALCULATION UNIT
104
RELATED NON-TEXT CONTENTS JUDGMENT UNIT
105
SERVICE TYPE JUDGMENT UNIT
106
PAGE SORTING UNIIT
113
POPULARITY DEGREE TABLE
114
POPULARITY DEGREE TRANSITION TABLE
115
NON-TEXT CONTENTS TABLE
SERVICE TYPE TABLE
116
107
RETRIEVAL SERVICE UNIT
BROWSER
108
USER

F I G. 2

DOCUMENT TABLE 111

URL	ID
http://aaa.co.jp/	123
http://bbb.co.jp/dd/	124
.....	....
.....	.....

F I G. 3

LINK RELATION TABLE 112

COLLECTION DATE	UPDATE DATE	LINK SOURCE ID	LINK DESTINATION ID STRING
010810	010725	123	124, 128, 3150, 3630, ...
010810	010620	124	256, 975, 1225, ...
....	.....	.....	.....

FIG. 4

POPULARITY DEGREE TABLE 113

CALCULATION DATE	DOCUMENT ID	POPULARITY DEGREE	POPULARITY DEGREE ORDER
010820	123	5036	346
010820	124	83645	5890
.....	......	......	.....

FIG. 5

POPURAITY DEGREE TRNSITION TABLE 114

DOCUMENT ID	POPULARITY DEGREE		POPULARITY DEGREE ORDER	
	REGRESSION COEFFICIENT	INTERCEPT	REGRESSION COEFFICIENT	INTERCEPT
123	-12	346	-6	233
124	-562	5890	-152	851
.....	......	......		.....

F I G. 6

NO-TEXT CONTENTS TABLE 115

DOCUMENT ID	RELATED NON-TEXT CONTENTS ID	TYPE
123	3630	mv
123	3150	snd
....	....	....

FIG. 7

SERVICE TYPE TABLE 116

DOCUMENT ID	SERVICE TYPE
124	SEARCH
123	SHOP

FIG. 8

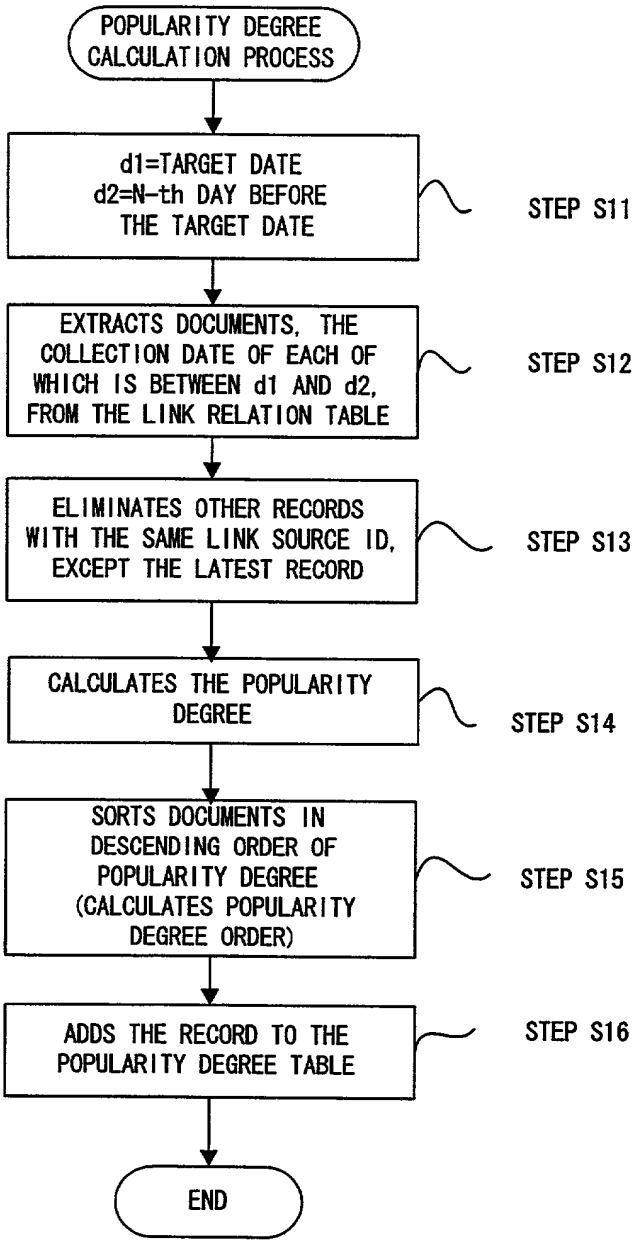
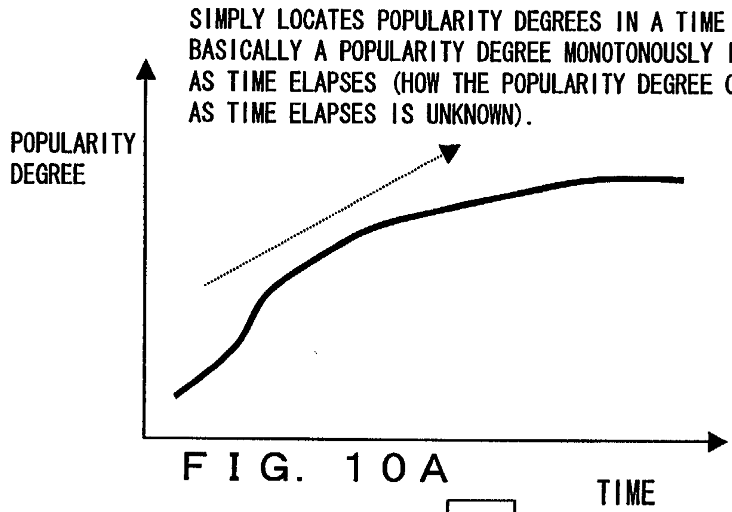
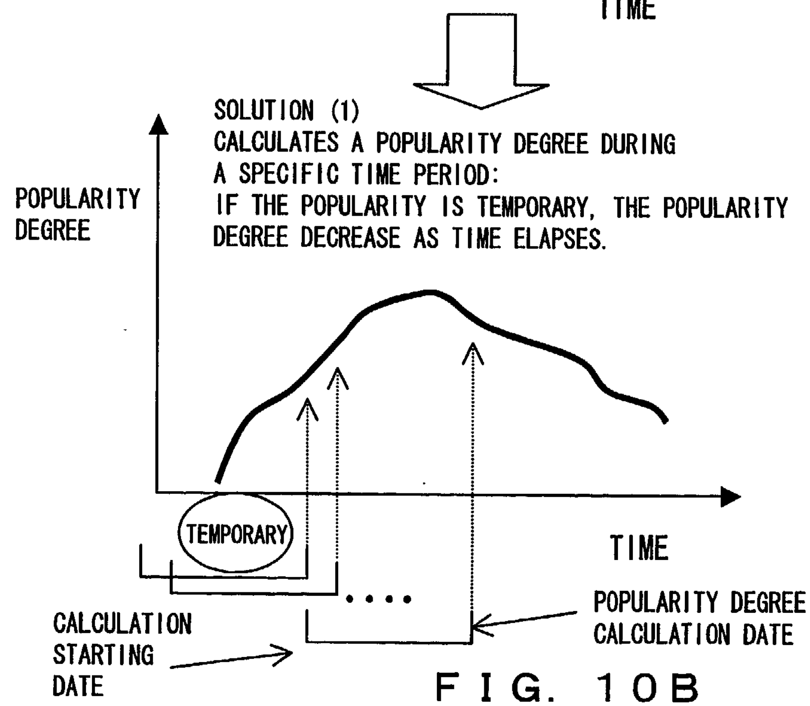

POPULARITY DEGREE CALCULATION PROCESS
d1=TARGET DATE
d2=N-th DAY BEFORE THE TARGET DATE
STEP S11
EXTRACTS DOCUMENTS, THE COLLECTION DATE OF EACH OF WHICH IS BETWEEN d1 AND d2, FROM THE LINK RELATION TABLE
STEP S12
ELIMINATES OTHER RECORDS WITH THE SAME LINK SOURCE ID, EXCEPT THE LATEST RECORD
STEP S13
CALCULATES THE POPULARITY DEGREE
STEP S14
SORTS DOCUMENTS IN DESCENDING ORDER OF POPULARITY DEGREE (CALCULATES POPULARITY DEGREE ORDER)
STEP S15
ADDS THE RECORD TO THE POPULARITY DEGREE TABLE
STEP S16
END

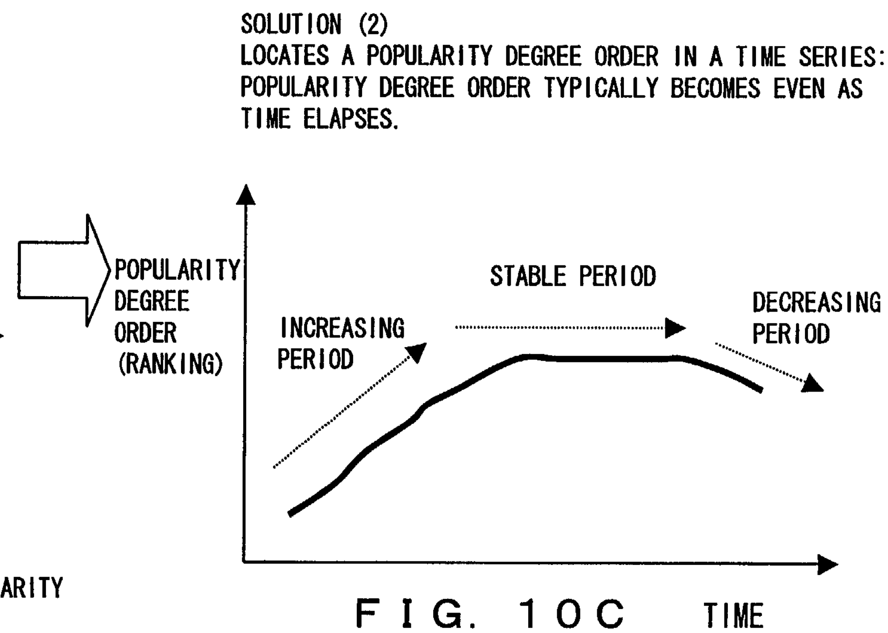
FIG. 9



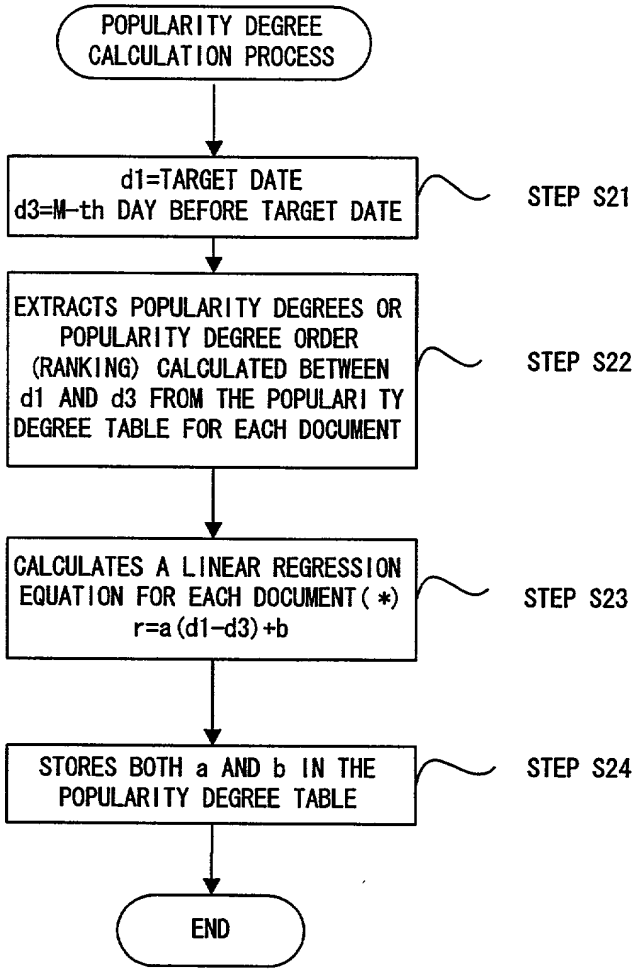
F I G. 1 0 A


SOLUTION (1)
CALCULATES A POPULARITY DEGREE DURING
A SPECIFIC TIME PERIOD:
IF THE POPULARITY IS TEMPORARY, THE POPULARITY
DEGREE DECREASE AS TIME ELAPSES.
POPULARITY
DEGREE
TEMPORARY
TIME
CALCULATION
STARTING
DATE
POPULARITY DEGREE
CALCULATION DATE

F I G. 1 0 B



F I G. 1 0 C



*IF POPULARITY DEGREES (OR POPULARITY DEGREE ORDER (RANKING)) OF d3, d3+1, ..., d1 (M DAYS) ARE ASSUMED TO BE W_0, W_1, ..., W_{M-1} RESPECTIVELY, THE FOLLOW EQUATIONS HOLD TRUE.

$a=(Mx1w-1xW)/(Mx12-1^2)$

$b=(1x1w-Wx12)/(1^2-Mx12)$

$$Iw=\sum_{i=0}^{M-1} i*w_i \quad , \quad W=\sum_{i=0}^{M-1} w_i \quad , \quad I=\sum_{i=0}^{M-1} i \quad , \quad I2=\sum_{i=0}^{M-1} i^2$$

FIG. 11

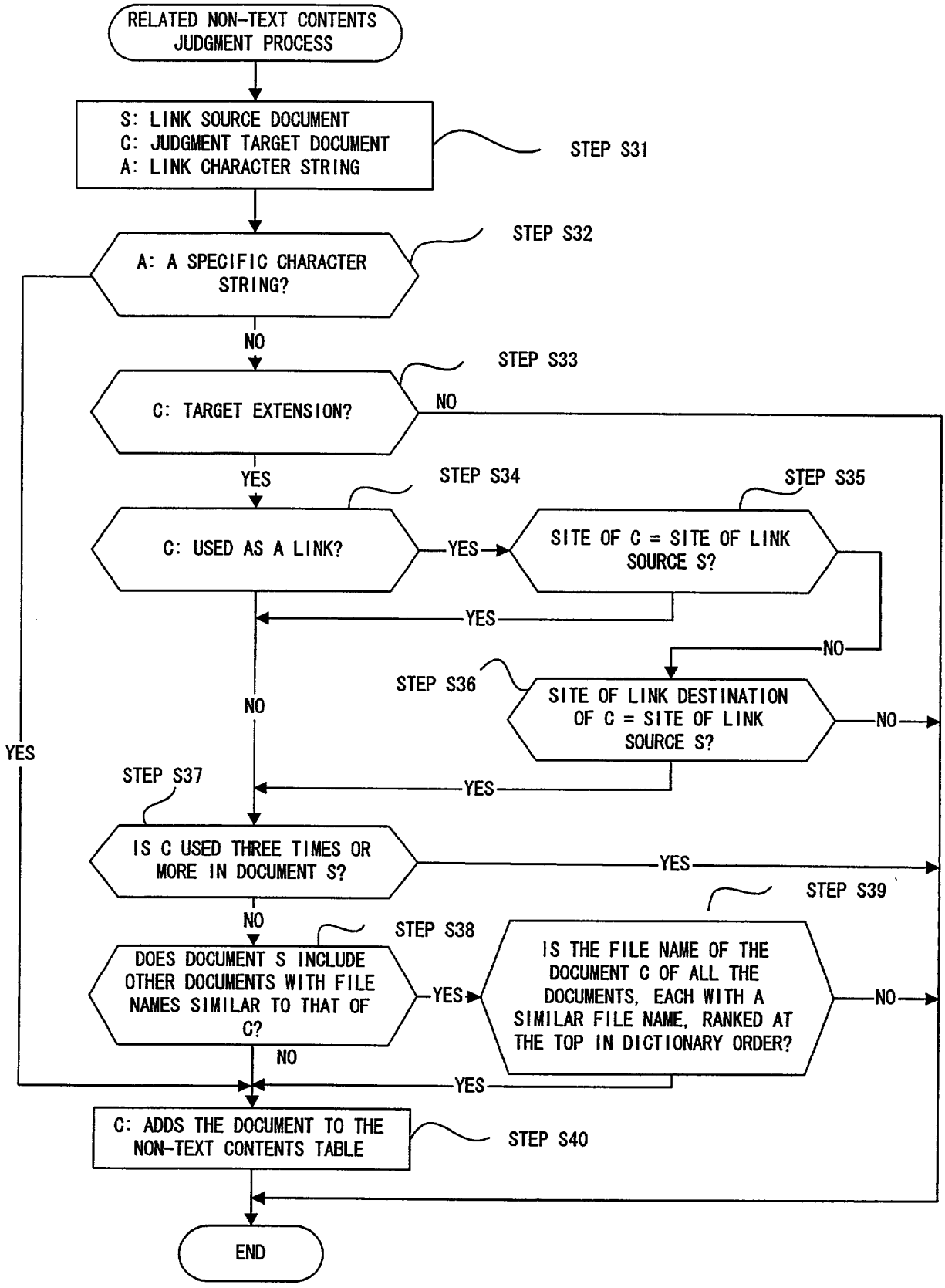

RELATED NON-TEXT CONTENTS JUDGMENT PROCESS
S: LINK SOURCE DOCUMENT
C: JUDGMENT TARGET DOCUMENT
A: LINK CHARACTER STRING
STEP S31
A: A SPECIFIC CHARACTER STRING?
STEP S32
NO
C: TARGET EXTENSION?
STEP S33
NO
YES
C: USED AS A LINK?
STEP S34
YES
SITE OF C = SITE OF LINK SOURCE S?
STEP S35
YES
NO
NO
SITE OF LINK DESTINATION OF C = SITE OF LINK SOURCE S?
STEP S36
NO
YES
YES
IS C USED THREE TIMES OR MORE IN DOCUMENT S?
STEP S37
YES
NO
DOES DOCUMENT S INCLUDE OTHER DOCUMENTS WITH FILE NAMES SIMILAR TO THAT OF C?
STEP S38
YES
IS THE FILE NAME OF THE DOCUMENT C OF ALL THE DOCUMENTS, EACH WITH A SIMILAR FILE NAME, RANKED AT THE TOP IN DICTIONARY ORDER?
STEP S39
NO
NO
YES
C: ADDS THE DOCUMENT TO THE NON-TEXT CONTENTS TABLE
STEP S40
END

FIG. 12

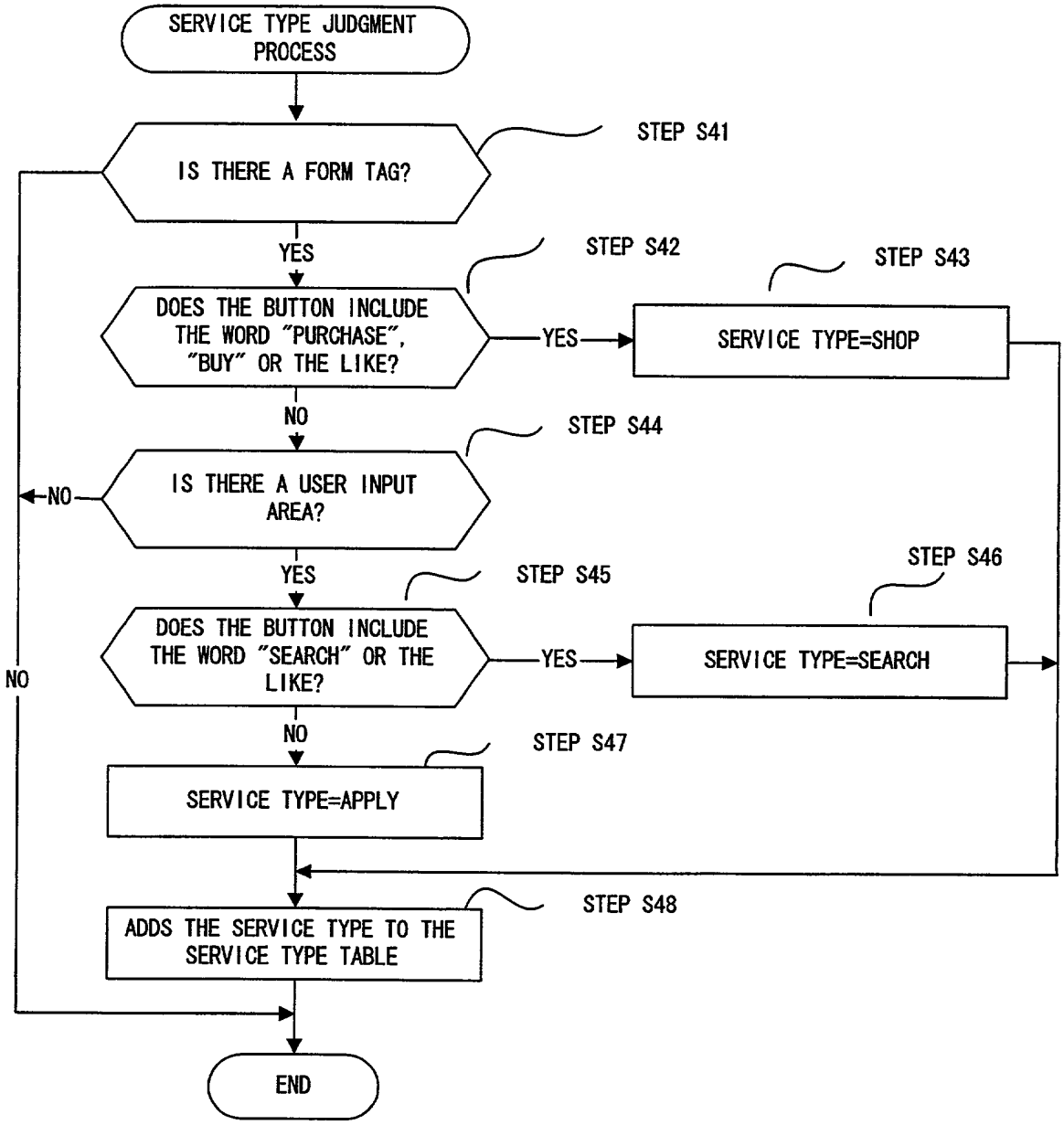
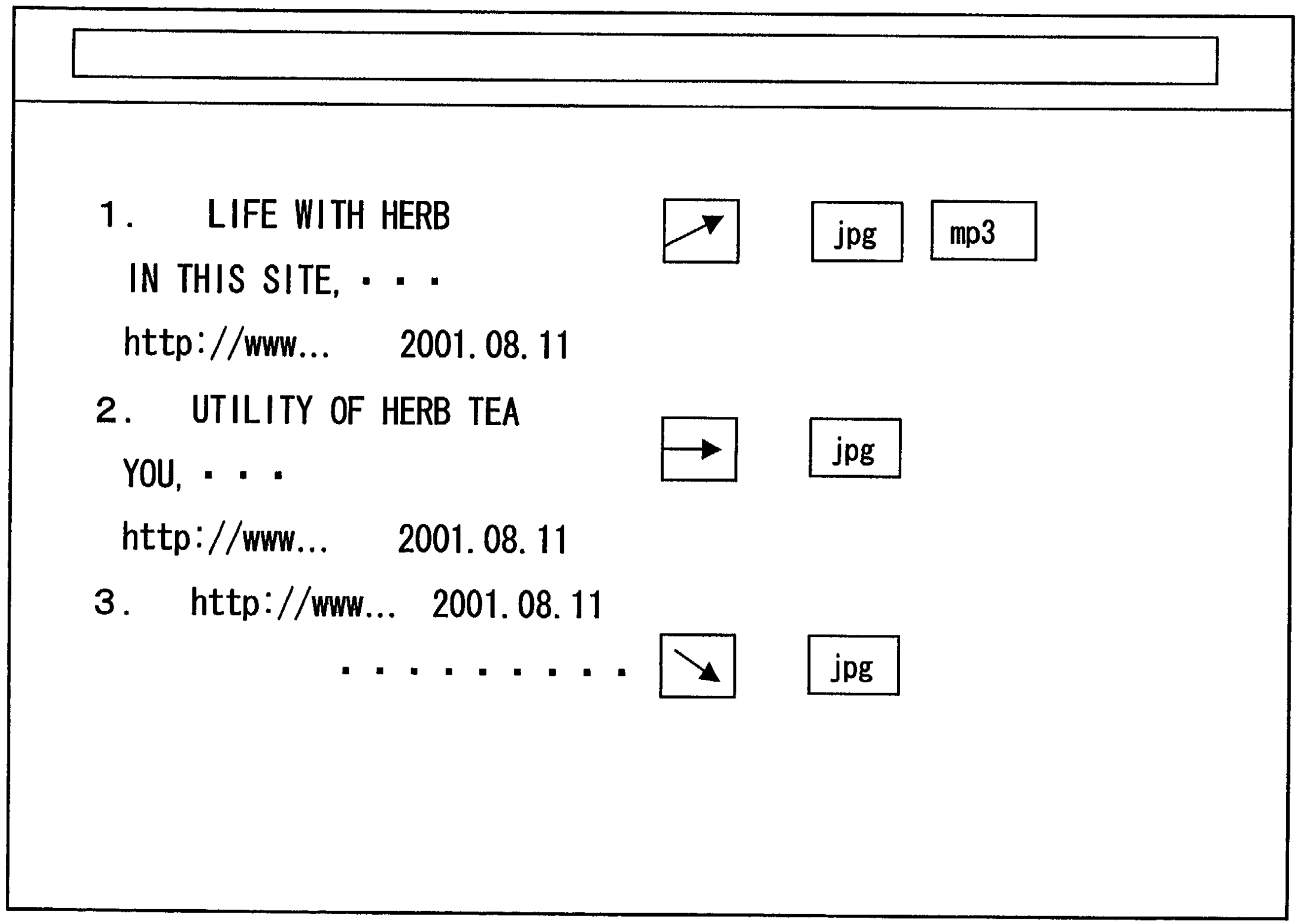


FIG. 13


1. LIFE WITH HERB
IN THIS SITE, • • •
http://www... 2001.08.11
jpg
mp3
2. UTILITY OF HERB TEA
YOU, • • •
http://www... 2001.08.11
jpg
3. http://www... 2001.08.11
jpg

F I G. 1 4

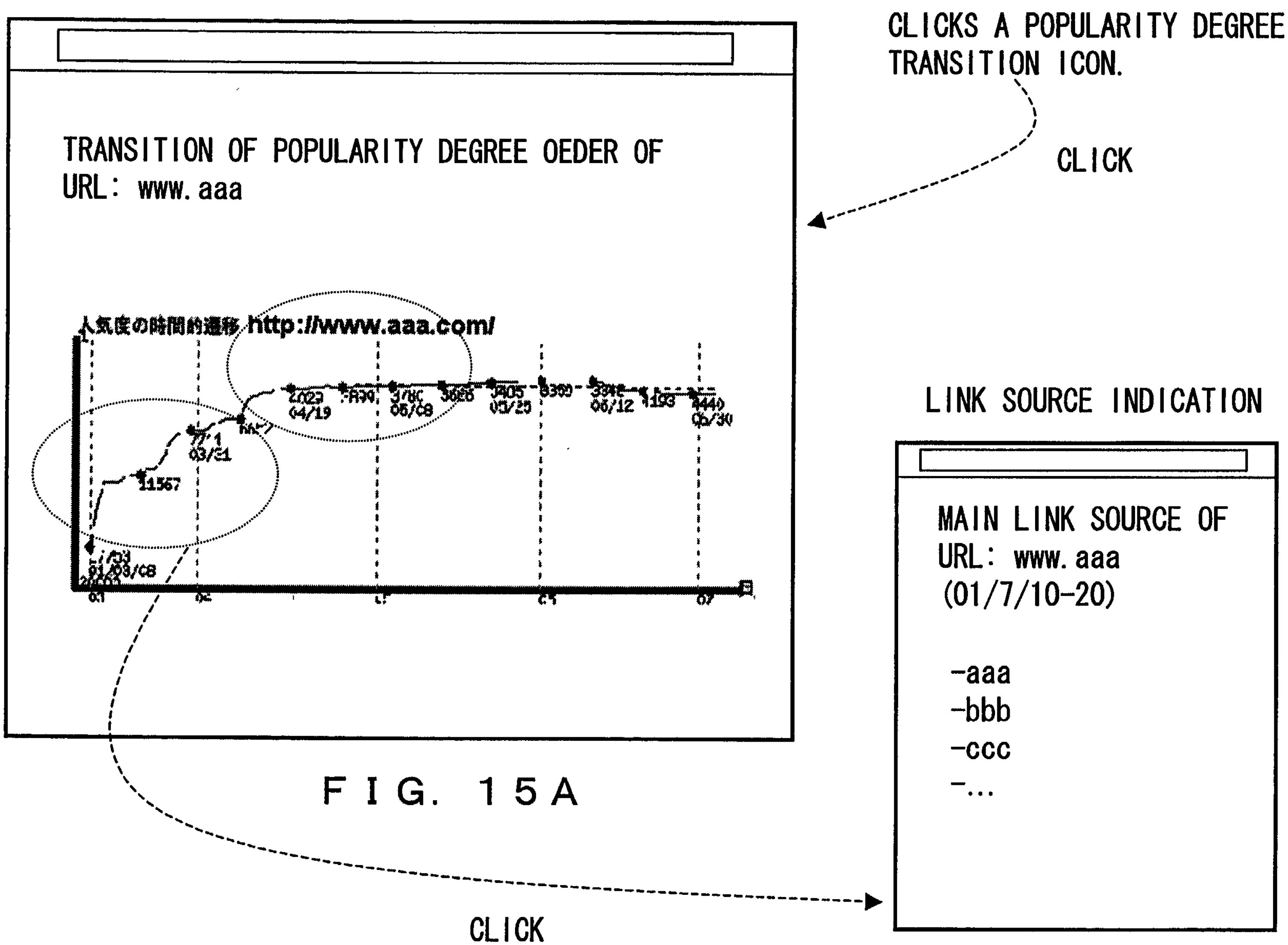
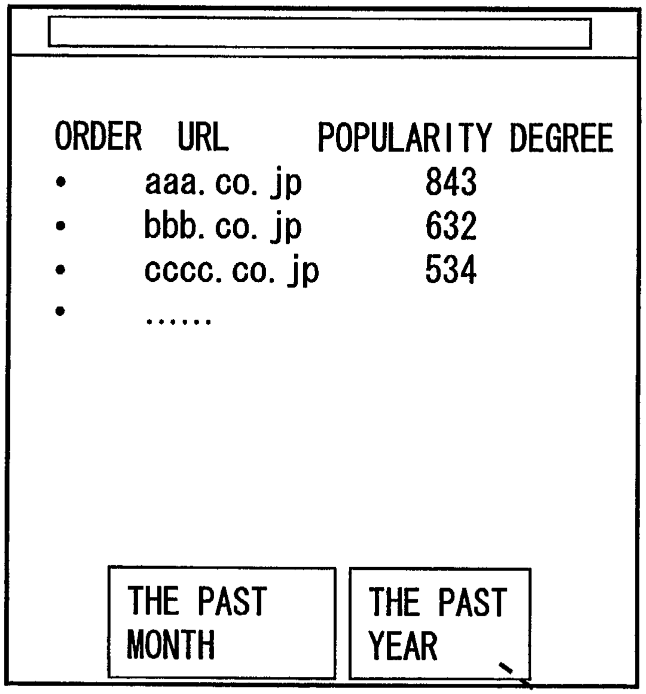


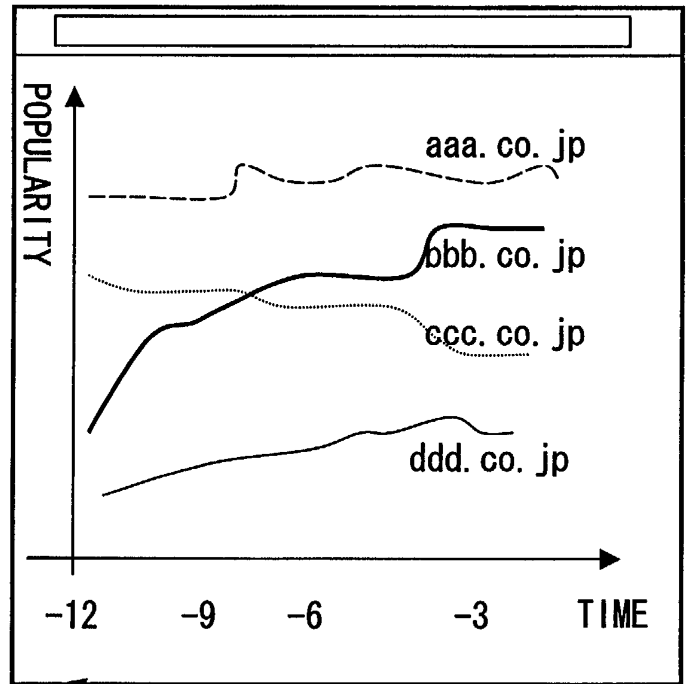
FIG. 15A

FIG. 15B



CURRENT POPULARITY DEGREE LIST

F I G. 1 6 A



POPULARITY DEGREE TRANSITION
IN THE PAST YEAR

F I G. 1 6 B

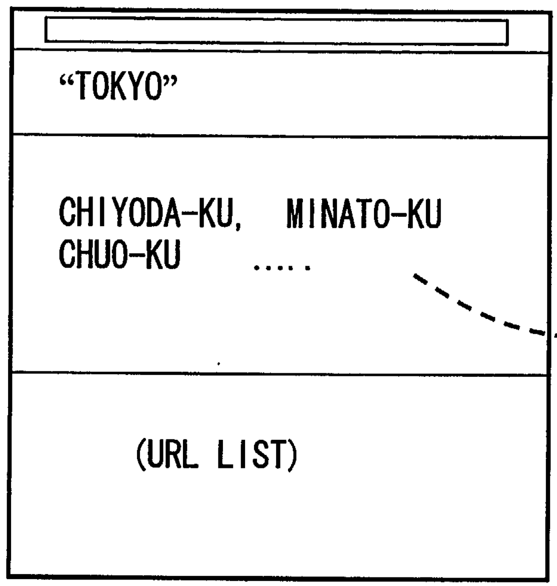


FIG. 17A

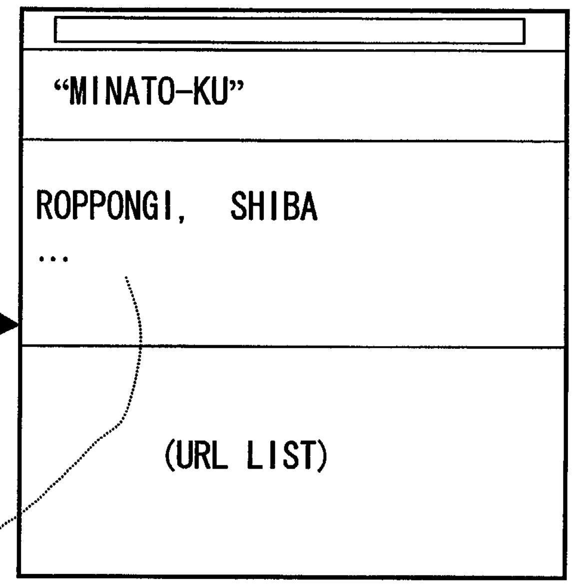


FIG. 17B

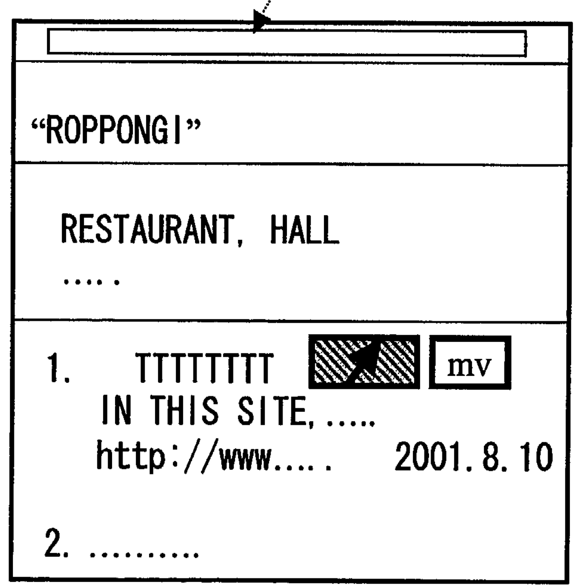
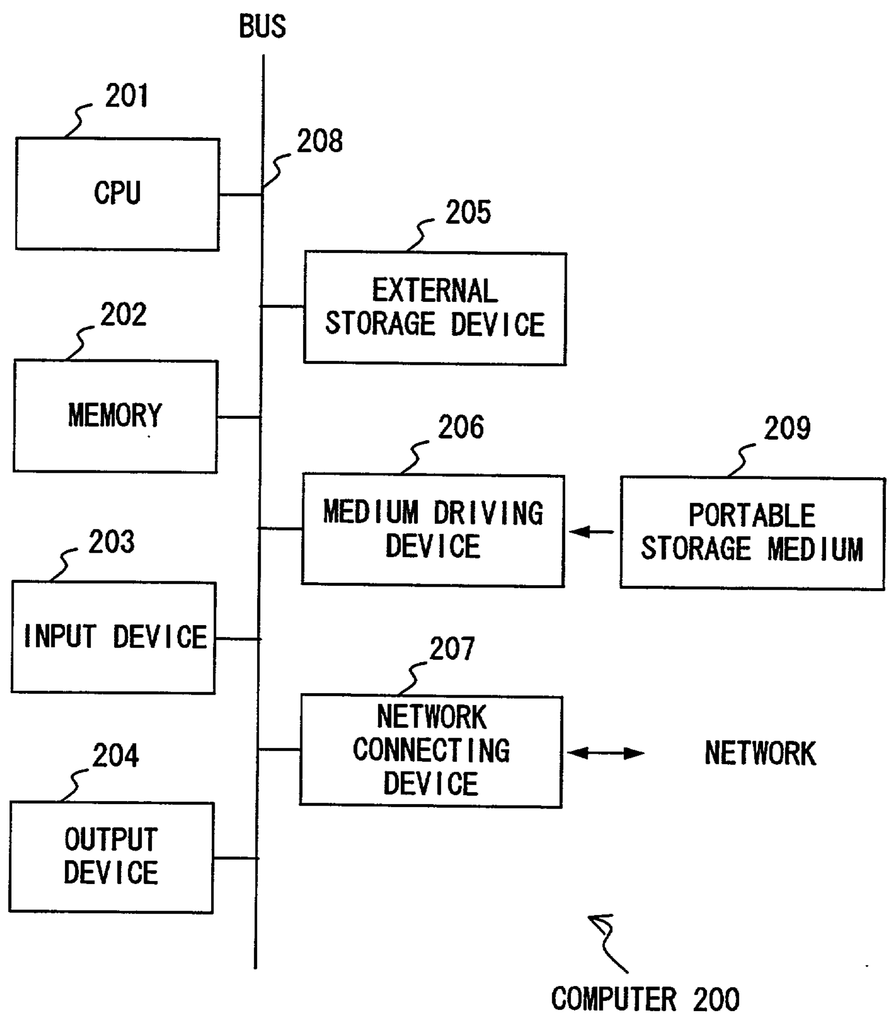


FIG. 17C


BUS
201
CPU
208
205
EXTERNAL STORAGE DEVICE
202
MEMORY
206
MEDIUM DRIVING DEVICE
209
PORTABLE STORAGE MEDIUM
203
INPUT DEVICE
207
NETWORK CONNECTING DEVICE
NETWORK
204
OUTPUT DEVICE
COMPUTER 200

F I G. 1 8

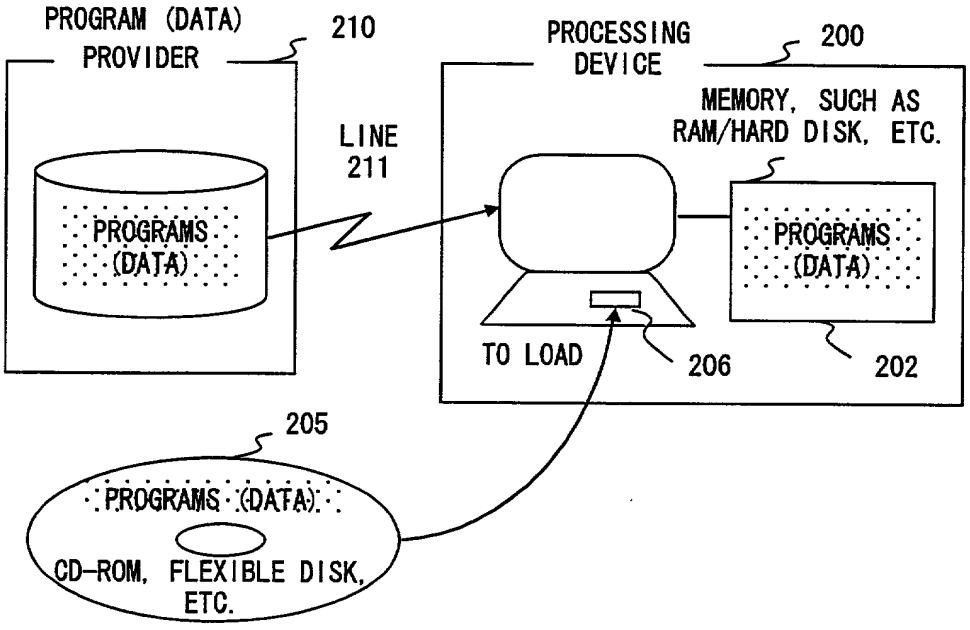


FIG. 19